What is claimed is:

1. A method for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having |pn| characters, and where said identification code can be insufficient to uniquely identify said first elements, and portions of said identification code values associated with said first and second elements can be unknown; comprising the steps of:

a) generating a mapping θ for said first set such that, for each element l_i of said first set $\theta(l_i)$ equals $<k_i, ppn_i>$, where pn_i is at least a portion of said identification code value associated with said element l_i and ppn_i is defined as the first k_i characters of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify l_i in said first set, whereby values for k_i greater than |pn| imply that said element l_i is not uniquely identified by said portion ppn_i;

b) determining pn_j for an element e_j in said second set, where pn_j is at least a portion of said identification code value associated with said element e_j; and

c) matching said element e_j and said element l_i only if the first k_i characters of pn_j equal ppn_i and not matching said element e_j and said element l_i if said element l_i is not uniquely identified in said first set by said portion pn_i.

2. A method as described in claim 1 where said first elements are letters and said second elements are events which occur during processing of said letters.

3. A method as described in claim 1 where, if elements e_j and l_i match, and the number of characters in pn_j is greater than the number of characters in pn_i, pn_i is set equal to pn_j.

4. A method for deterministically matching letters in a first set with events in a second set, matching letters and events each being associated with common values of an identification code <pn, pc>, where pn is a postal delivery code including at most |pn| characters and pc is a tracking code, and where said code pc is constant for all said letters and said identification code can be insufficient to uniquely identify said letters, and portions of said delivery code pn associated with said letters and said events can be unknown; comprising the steps of:

a) generating a mapping θ for said first set such that, for each letter l_i in said first set $\theta(l_i)$ equals $< k_i, ppn_i >$, where pn_i is at least a portion of pn in said identification code value <pn, pc>associated with said letter l_i, and ppn_i is defined as the first k_i characters of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify said letter l_i in said first set, whereby values for k_i greater than |pn| imply that said letter l_i is not uniquely identified by said portion ppn_i;

b) determining pn_j for an event e_j in said second set, where pn_j is at least a predetermined portion of pn in said identification code value <pn, pc> associated with said event e_j; and

c) matching said event e_j and said letter l_i only if the first k_i characters of pn_j equal ppn_i and not matching said event e_i and said letter l_i if said letter l_i is not uniquely identified in said first set by said portion pn_i.

5. A method as recited in claim 4 where the number of said letters in said first set |L| is greater than or equal to 0, further comprising a step of adding a new letter l_m, to said first set.

6. A method as recited in claim 4 further comprising a step of performing an additional consistency test and matching said letter l_i and event e_j only if said consistency test confirms such match.

7. A method as described in claim 6 where a time d_i is associated with said event d_i and times ed_i and s_i are associated with said letter l_i and said consistency test comprises determining if said time s_i is less than or equal to said time d_i and said time d_i is less than or equal to said time ed_i; where said time ed_i is the estimated latest time of delivery of said letter l_i and said time s_i is the time said letter l_i entered a delivery process.

8. A method for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having |pn| characters, and where said identification code can be insufficient to uniquely identify said first elements, and portions of said identification code values associated with said first and second elements can be unknown; comprising the steps of:

a) generating a minimal k-unique mapping for said first set such that, for each element l_i of said first set such that l_i maps to a pair $<k_i, ppn_i>$, where pn_i is at least a portion of said identification code value pn associated with said first elements and ppn_i is defined as the first k_i characters of pn_i,

b) determining pn_j for an element e_j in said second set, where pn_j is at least a portion of said identification code value associated with said element e_j; and

c) matching said element e_j and said element l_i only if the first k_i characters of pn_j equal ppn_i and not matching said element e_j and said element l_i if said element l_i is not uniquely identified in said first set.

9. A method as described in claim 8 where said first elements are letters and said second elements are events which occur during processing of said letters.

10. A data processing system for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having |pn| characters, and where said identification code can be insufficient to uniquely identify said first elements, and portions of said identification code values associated with said first and second elements can be unknown; said data processing system being programmed to:

a) generate a mapping θ for said first set such that, for each element I_i of said first set $\theta(I_i)$ equals $<k_i, ppn_i>$, where pn_i is at least a portion of said identification code value associated with said element I_i and ppn_i is defined as the first k_i characters of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify I_i in said first set, whereby values for k_i greater than |pn| imply that said element I_i is not uniquely identified by said portion ppn_i;

b) input pn_j for an element e_j in said second set, where pn_j is at least a portion of said identification code value associated with said element e_j; and

c) match said element e_j and said element I_i only if the first k_i characters of pn_j equal ppn_i and not match said element e_j and said element I_i if said element I_i is not uniquely identified in said first set by said portion pn_i.

11. A data processing system as described in claim 10 said data processing system being further programmed to, if elements e_j and I_i match, and the number of characters in pn_j is greater than the number of characters in pn_i, set pn_i equal to pn_j.

12. A data processing system for deterministically matching letters in a first set with events in a second set, matching letters and events each being associated with common values of an identification code <pn, pc>, where pn is a postal delivery code including at most |pn| characters and pc is a tracking code, and where said code pc is constant for all said letters and said identification code can be insufficient to uniquely

identify said letters, and portions of said delivery code pn associated with said letters and said events can be unknown; said data processing being programmed to:

a) generate a mapping θ for said first set such that, for each letter l_i in said first set $\theta(l_i)$ equals $< k_i, ppn_i >$, where pn_i is at least a portion of pn in said identification code value <pn, pc>associated with said letter l_i, and ppn_i is defined as the first k_i characters of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify said letter l_i in said first set, whereby values for k_i greater than |pn| imply that said letter l_i is not uniquely identified by said portion ppn_i;

b) input pn_j for an event e_j in said second set, where pn_j is at least a predetermined portion of pn in said identification code value <pn, pc> associated with said event e_j; and

c) match said event e_j and said letter l_i only if the first k_i characters of pn_j equal ppn_i and not match said event e_i and said letter l_i if said letter l_i is not uniquely identified in said first set by said portion pn_i.

13. A data processing system as recited in claim 12 where the number of said letters in said first set |**L**| is greater than or equal to 0, and said data processing system is further programmed to add a new letter l_m, to said first set.

14. A data processing system as recited in claim 12 where said data processing system is further programmed to perform an additional consistency test and match said letter l_i and event e_j only if said consistency test confirms such match.

15. A data processing system as recited in claim 14 where a time d_i is associated with said event d_i and times ed_i and s_i are associated with said letter l_i and said consistency test comprises determining if said time s_i is less than or equal to said time d_i and said time d_i is less than or equal to said time ed_i; where said time ed_i is the estimated latest

time of delivery of said letter l_i and said time s_i is the time said letter l_i entered a delivery process.

16. A data processing system for deterministically matching first elements of a first set of objects or events with second elements of a second set of objects or events, matching first and second elements each being associated with common values of an identification code pn having |pn| characters, and where said identification code can be insufficient to uniquely identify said first elements, and portions of said identification code values associated with said first and second elements can be unknown; said data processing system being programmed to:

a) generate a minimal k-unique mapping for said first set such that, for each element l_i of said first set such that l_i maps to a pair $<k_i, ppn_i>$, where pn_i is at least a portion of said identification code value pn associated with said first elements and ppn_i is defined as the first k_i characters of pn_i,

b) input pn_j for an element e_j in said second set, where pn_j is at least a portion of said identification code value associated with said element e_j; and

c) match said element e_j and said element l_i only if the first k_i characters of pn_j equal ppn_i and not match said element e_j and said element l_i if said element l_i is not uniquely identified in said first set.

17. A computer readable medium for providing program code for execution by a programmable data processor, said processor being responsive to said program code to:

a) generate a mapping θ for a first set such that, for each element l_i of said first set $\theta(l_i)$ equals $<k_i, ppn_i>$, where pn_i is at least a portion of an identification code value associated with said element l_i and ppn_i is defined as the first k_i characters

of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify l_i in said first set;

b) input pn_j for an element e_j in a second set, where pn_j is at least a portion of said identification code value associated with said element e_j; and

c) match said element e_j and said element l_i only if the first k_i characters of pn_j equal ppn_i and not match said element e_j and said element l_i if said element l_i is not uniquely identified in said first set by said portion pn_i.

18. A computer readable medium for providing program code for execution by a programmable data processor, said processor being responsive to said program code to:

a) generate a mapping θ for said a set of letters l such that, for each letter l_i in said first set $\theta(l_i)$ equals $< k_i, ppn_i >$, where pn_i is at least a portion of pn in an identification code value <pn, pc>associated with said letter l_i, and ppn_i is defined as the first k_i characters of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify said letter l_i in said first set;

b) input pn_j for an event e_j in a second set, where pn_j is at least a predetermined portion of pn in said identification code value <pn, pc> associated with said event e_j; and

c) match said event e_j and said letter l_i only if the first k_i characters of pn_j equal ppn_i and not match said event e_i and said letter l_i if said letter l_i is not uniquely identified in said first set by said portion pn_i.

19. A system for matching letters with events occurring during delivery of said letters, said system comprising:

a) a scanner for scanning code <pn, pc>, where pn is a postal delivery code including at most |pn| characters and pc is a tracking code, printed on said letters during occurrence of one of said events;

b) a data processing system communicating with said scanner to input said code <pn, pc> and for deterministically matching letters in a first set with events in a second set, matching letters and events each being associated with common values of said identification code <pn, pc>.

20. A system as described in claim 19 where said data processing system is programmed to:

a) generate a mapping θ for said first set such that, for each letter l_i in said first set $\theta(l_i)$ equals $< k_i, ppn_i >$, where pn_i is at least a portion of pn in said identification code value <pn, pc>associated with said letter l_i, and ppn_i is defined as the first k_i characters of pn_i, and k_i is selected to be the minimum number of characters required to uniquely identify said letter l_i in said first set, whereby values for k_i greater than |pn| imply that said letter l_i is not uniquely identified by said portion ppn_i;

b) input pn_j for an event e_j in said second set, where pn_j is at least a predetermined portion of pn in said identification code value <pn, pc> associated with said event e_j; and

c) match said event e_j and said letter l_i only if the first k_i characters of pn_j equal ppn_i and not match said event e_i and said letter l_i if said letter l_i is not uniquely identified in said first set by said portion pn_i.

21. A system as described in claim 19 where said data processing system is programmed to:

a) generate a minimal k-unique mapping for said first set such that, for each element I_i of said first set such that I_i maps to a pair $<k_i, ppn_i>$, where pn_i is at least a portion of said identification code value pn associated with said first elements and ppn_i is defined as the first k_i characters of pn_i,

b) input pn_j for an element e_j in said second set, where pn_j is at least a portion of said identification code value associated with said element e_j; and

c) match said element e_j and said element I_i only if the first k_i characters of pn_j equal ppn_i and not match said element e_j and said element I_i if said element I_i is not uniquely identified in said first set.